UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,734	02/26/2002	David Needham	5405-212IPDV	3807

30678 7590 04/16/2007
CONNOLLY BOVE LODGE & HUTZ LLP
P.O. BOX 2207
WILMINGTON, DE 19899-2207

EXAMINER	
KISHORE, GOLLAMUDI S	
ART UNIT	PAPER NUMBER
1615	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/083,734	NEEDHAM, DAVID	
	Examiner	Art Unit	
	Gollamudi S. Kishore, Ph.D	1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *57,59-64 and 66-175* is/are pending in the application.

4a) Of the above claim(s) *57 59-64 72 75 87-92 94-96 104 108-115 157-158* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *are 66-71, 73, 74, 76-86, 93, 97-103, 105-107, 116-136, 137-156 and 159-175* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's election without traverse of Group II in the reply filed on 2-2-07 is acknowledged. Upon consideration, the species election requirement with respect to the hydrophilic polymer and active agent is withdrawn. The election requirement with respect to the second component is still applicable and the examiner notes the election of lysolipid. Upon consideration, the species election requirement for specific lysolipid is also withdrawn. Upon consideration, the restriction requirement between group II and group III is withdrawn. Claims 84-86 and 105-107 are included to the extent that they could read on lysolipids having the myristoyl, palmitoyl and stearoyl groups.

Claims included in the prosecution are 66-71, 73, 74, 76-86, 93, 97-103, 105-107, 116-136, 137-156 and 159-175.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 124, 171-172, 174 and 175 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The distinction between an antineoplastic agent and antitumor agent as recited in claim 124 is unclear.

The second component, in particular, the elected second component is a lipid; it

is unclear to the examiner how it can be present only in one layer of the lipophilic bilayer of the liposome as recited in these claims.

Claim Rejections - 35 U.S.C. § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 66, 69-71, 73-74 and 77, 84-86, 93,105-107, 116-122, 124-125, 128, 131-133, 136-144, 147-153, 159, 161-171 and 173 are rejected under 35 U.S.C. 102(b) as being anticipated by Ogawa (5,094,854)).

Ogawa discloses liposome compositions various drugs for hyperthermia therapy. The liposomes contain a mixture of lipids including the claimed combination and various drugs. (note the abstract, col. 1, line 58 through col. 4, line 37; Examples and claims).

This rejection is maintained since the claims recite the second component in generic terms.

Applicant's arguments have been fully considered, but are not found to be persuasive. Applicant's arguments once again are based on the first and second components in Ogawa. These have been addressed before.

6. Claims 66, 69, 77, 84-86, 93, 97, 105-107, 116-118, 121-122, 124-125, 128, 131-136 and 162-170 are rejected under 35 U.S.C. 102(b) as being anticipated by Eibl (5,626,867).

Eibl discloses liposomal formulations containing phospholipids. The phospholipids include DPPC and DSPA. One of the phospholipids, which could be used in combination, is a lysophosphatidic acid (either R1 or R2 in the structure on col. 2 is hydrogen). The liposomes contain a variety of active agents including anti-tumor agents (note the abstract, col. 1, line 65 through col. 2, line 43, col. 4, line 39 through line 61; Examples, example 1 in particular and claims).

Applicant's arguments have been fully considered, but are not found to be persuasive. Applicant's arguments once again are based on the first and second components in Ogawa. These have been addressed before.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 121-123, 125-127, 129-130, 152-156 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa cited above.

The teachings of Ogawa have been discussed above. What is lacking in these references is the teaching of claimed active agents. However, since the principle of encapsulation is the same, it would have been obvious to one of ordinary skill in the art to encapsulate any active agent with a reasonable expectation of success.

9. Claims 66-71, 73, 74, 76-86, 93, 97-103, 105-107, 116-136, 137-156 and 159-172 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hristova (Macromolecules, vol. 28, pp. 7693-7699, 1995) in combination with Ogawa cited above.

Hristova discloses liposomal formulations containing dipalmitoylphosphatidylcholine and a lysolipid. The liposomes further comprise PEG derivatized lipids. Although Hristova does not teach instant lysolipid, monopalmitoylphosphatidylcholine, Hristova discusses the effect if lysolipids in general on gel phase bilayers and provides a specific example of the effect of the lysolipid, monooleoylphosphatidylcholine (note the abstract, Materials and Methods and Discussion). Therefore, it would have been obvious to one of ordinary skill in the art to use any lysophosphatidylcholine (that is substituted with any fatty acid moiety) with the expectation of obtaining similar effect on the gel phase bilayers. Hristova does not teach specific encapsulated active agents or a method of administration using hyperthermia (heating). However, in the introduction part, Hristova clearly suggests that the liposomes are for drug delivery, though not using hyperthermia.

Ogawa as pointed out above, teaches that DPPC has a transition temperature of 41.4 degrees and the use of liposomes containing DPPC for hyperthermia therapy (note the abstract, col. 1, line 58 through col. 4, line 37; Examples and claims).

It would have been obvious to one of ordinary skill in the art to use liposomes containing DPPC of Hristova for the delivery of active agents by hyperthermia therapy with a reasonable expectation of success since Ogawa teaches that DPPC has a transition temperature of 41.4 degrees and liposomes containing this phospholipid could be used successfully for the delivery of active agents using hyperthermia therapy.

Applicant's arguments have been fully considered, but are not found to be persuasive. Applicant argues that Hristova is directed to the study of bilayer-micelle transitions in liposomes comprising PEGylated lipids and does not disclose that the addition of lysolipid t the gel phase lipid bilayer is sufficient to increase a first percentage of active agent released from the liposome at the phase transition temperature. These arguments are not persuasive since Hristova teaches the same claimed combination of phospholipids and suggestive of drug delivery and therefore, the composition would be expected to behave the same way when subjected to heat and could be used in hyperthermia therapy as also taught by Ogawa. Applicant's arguments that the examiner has provided no motivation for combining the disclosures of Hristova and Ogawa are not persuasive since Ogawa's compositions are liposomal compositions just like Hristova's and Ogawa's reference provides motivation for one of ordinary skill in the art how to release the active agent in the host, if hyperthermia therapy is used.

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 66-71, 73, 74, 76-86, 93, 97-103, 105-107, 116-136, 137-156 and 159-172 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-68 of U.S. Patent No. 6,726,925. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims in said patent and instant claims are drawn to the same compositions; in instant claims, the elected second component is lysolipid and the patented claims recite specific lysolipids; it would have been obvious to one of ordinary skill in the art to use any lysolipid with a reasonable expectation of success. Instant claims recite the active agent as a pharmacologically active agent, a flavor agent, a diagnostic agent or a nutritional agent whereas the patented claims recite a pharmacologically active agent or

a diagnostic agent. The pharmacologically active agent and the diagnostic agent in instant application are anticipated by the patented claims. The flavor agent and nutritional agent are obvious variants since it would have been obvious to encapsulate any active agent in the liposomes in the patented claims since the principle of encapsulation is the same.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gollamudi S. Kishore, Ph.D whose telephone number is (571) 272-0598. The examiner can normally be reached on 6:30 AM- 4 PM, alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Woodward Michael can be reached on (571) 272-8373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gollamudi S Kishore, Ph.D
Primary Examiner
Art Unit 1615

GSK